Health Concepts, Issues, and Experience in the Abakaliki Area, Nigeria

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Environmental health problems are increasingly receiving global attention. The health of entire nations may not only be affected by adverse environmental conditions, but by nutritional deficiencies that lead to morbidity and mortality. The type and extent of adverse health effects in a population depend on the potential for exposure to some environmental factors and pathogens as well as other environmental variables like industrialization, sanitation conditions, and urbanization. National and international comparisons between health status indicators can reveal the extent of any differences that exist, including dynamic changes in prevailing environmental conditions which may be helpful in characterizing the role of specific risk factors. Improvements in collection of environmental data related to health can help to identify, control, and eliminate many of the factors that are associated with environmental risk in the Abakaliki area of eastern Nigeria. *Key words:* Africa, environmental health, national development, Nigeria, sanitation. *Environ Health Perspect* 102:854–856 (1994)

The economic recession of the 1980s and its effect on the quality of life in nonindustrialized nations brought into focus the necessity for public health issues to be presented in developmental policies. Evidently, it is impractical and almost impossible to meet the increasing costs of health and health care and the emergence of complicated risk estimates unless environmental health is incorporated as a priority in the development of these objectives. It is estimated that more than 75% of illnesses are related to variations in income. Actually, this linkage is not only associative but structural–causal, in that income growth is directly proportional to improved health. For example, a 10% increase in income decreases infant mortality by about 1–2% in Nigeria and in certain other nonindustrialized countries (*1–3*).

A link between environmental health and development is fundamental to this visionary expanse of health. With respect to the new paradigm for public health action for the accelerated achievement of health for all, four key orientations which will make provision for the primary impact of the World Health Organization's (WHO) strategy in the future are: 1) reassertion of the rights and responsibilities of individuals, families, and communities in health protection and promotion; 2) ensuring accessible health care, particularly to countries and populations with evident need; 3) mobilizing and ensuring the optimal use of all available health resources; and 4) evaluating public health action, both its impact on sustainable development and on disease abatement. According to the WHO director-general before the WHO Executive Board in January 1992, "Health for all means not only health for all people, but also health during each phase of an individual life cycle."

This report focuses on the ethnic Abakaliki zone in Nigeria, which is made up of local government administrative areas of Abakaliki, Ezza, Izzi, Ikwo, and Ishielu. It forms part of a densely populated, socioeconomically undeveloped area that is mainly agrarian in character with environmental-polluting industries such as the Nkalagu cement factory as well as the derelict Enyigba lead and zinc mine. There are immediate interests to renew mining operations at the latter site. There is widespread contamination of drinking and cooking water sources by guinea worm and other parasites in the Abakaliki area, causing physical disabilities and resultant loss in income. Local ecological problems constitute great impediments in this area. Drinking wells are not generally used by the people because the area contains enormous amounts of zinc and other minerals (*4*) that pollute the wells. Limited baseline data for certain trace elements in cultivated soils and plants have been obtained for some areas of Abakaliki (*5–9*), using appropriate plant species as environmental monitors (*10*). In the mineralized Abakaliki zone of Nigeria, trace elements in sediments have been detected at the following levels: 3.5 mg Cd/kg; 50 mg Pb/kg; 112 mg Zn/kg; 1183 mg Mn/kg; and 5.2 mg Fe/kg (*11*). If an epidemiological map is drawn, it depicts that this agrarian part of Nigeria is beset by diverse environmental problems and ill health (*12–15*), as well as poor socioeconomic conditions (*16*).

Those countries with higher population growth rates have frequently converted land to agricultural uses, thus exerting excessive pressures on land and natural habitats. In most parts of eastern Nigeria, intensification of farming by shorter fallow periods rather than by better inputs and techniques has led to soil resource mining, stagnation, or decline in yields. Rapid population growth has resulted in the forfeiture of traditional land management for the prevention of degradation. Water supply and sanitation have become problematic in Nigeria, where the provision of clean water to the burgeoning population by the year 2030 will require augmenting urban connections 4-fold and rural connections 9-fold and for proper sanitation about 6.5-fold (*17*). In the slums in several cities, such as Onitsha in eastern Nigeria, water costs the poor about 18% of their household income (*18*). Studies have shown that where water demand is the focus, four broad categories of rural community emerge: type I: willingness to pay for private connections is high and willingness to pay for public water points is low; type II: only a minority of households are willing to pay the full costs of private connections, but most households are willing to pay the full costs of public water points; type III: households' willingness to pay for improved services is high but not high enough to pay the full costs of an improved service; and type IV: willingness to pay for any kind of improved service is low (*17–20*).

Resource mismanagement and misappropriation and haphazard and untoward planning mechanisms plague most of the nonindustrialized countries today. Countries like Nigeria possess enough resources for adequate scientific and technological planning, but the formulated documents and resources are dormant in the nation's archives, a true testimony of wasteful and intellectually fraudulent exercises performed every 4–5 years in planning for national development. Despite excessive, obsessive, and habitual planning, Nigeria's water and sanitation, nutritional and health status, living, and housing conditions are in a more deleterious situation at present than a few decades ago. Beyond modern microeconomic planning, we have been led into the far depths of near-irretrievable poverty.

The health authorities have an enormous task in bringing health and health care measures within the reach of the average Nigerian because several man-hour losses occur due to morbidity. About 1 out of 20 people interviewed between April 1991 and March 1992 was ill or injured within the 14 days preceding the interview, and of these 19% did not lead to loss of work-days, 38% had loss of work-days varying from 1 to 3 days, 28% lost from 4 to 7 days, while 25% had losses of at least 8 days. Just 1% of the households experienced mortality within the family during the 12 months before the survey, and over 50% of these deaths were children under 5 years of age (*21*). Despite the government's primary health care (PHC) and

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immunization programs, children are yet to be adequately safe from preventable diseases. Dracunculiasis (guinea worm) eradication has been adopted as an international goal by the end of 1995. In Nigeria, between 1987 and 1992, annually reported cases dropped from 653,000 to 201,000. Generally, the progress achieved has been through vertical programs specific to dracunculiasis. Eradication of the ailment from the poor, sparsely populated endemic West African countries necessitates integrated programs providing for the sharing of available resources for dracunculiasis control with other activities like immunization. In addition, community-based surveillance systems can be promoted to improve and monitor communal health and public health workers to control other diseases such as polio (*22*).

Traditional medicine is still an important component of the health care system in both Africa and Asia. It accounts for over 10% of overall expenditure. In Nigeria, the ratio of traditional to modern health practitioners is estimated to be 28 to 1 (*3,23*). Those nations which have decentralized more have devolved responsibility for health services as well as government health program evaluation and government health facility management to subnational government levels. This devolution exercise has been occurring for several years in certain large nonindustrialized nations with federal government systems, such as Nigeria (*3,24*). Primary health care training should at least include the necessary skills for fundamental clinical services. The basic nursing training curriculum has been strongly oriented toward community settings and preventive measures in Nigeria (*25–27*).

Extensive advances have occurred in the health protection of women and children in recent decades through accelerated immunizations and improved medical care during pregnancy and delivery. Although this progress has helped reduce infant and maternal mortality rates, much remains to be done. A large percentage of deaths in nonindustrialized countries involves children who are younger than 5 years old. In Nigeria, the infant mortality rate has been estimated at 85 per 1000 live births, and the childhood mortality rate is 144 per 1000 children aged 1–4 years. Childbirth is related to marked mortality among Nigerian women. Data from rural areas in Nigeria indicate that infant mortality rates may reach 100 to 160 per 1000 live births (*28*).

Economic stagnation has resulted in rapid urbanization in Nigeria, a rise in rent, and a lack of habitable dwellings. In the urban areas of Nigeria, more than 87% of the population live in single rooms or combinations of rooms, and only 5% occupy flats (*21*), which are all usually shared or used as family units. Access to drinking water and sanitation facilities may be a problem, especially where there are proliferations of squatter settlements at city outskirts or within certain urban areas like Lagos. The International Drinking Water Supply and Sanitation Decade was launched in 1980 at the UN General Assembly with the aim of making water and sanitation available to everyone (*29*). Greater progress is evident in access to safe water than in sanitation services. Although access to both sanitation and water supply has improved in urban areas of certain countries, in others it has continually decreased. In most parts of Nigeria as well as in other nonindustrialized countries, rural populations have very poor access to safe water and sanitation services. Pit and bucket latrines still predominate in Nigeria; 75% of urban households and 42% of rural households make use of pit latrines. About 52% of rural dwellers have no conventional toilets, so they use the bush or dunghills (*21*).

Water pollution is the most evident form of pollution in Nigeria. Although waterways can absorb substantial quantities of toxic substances, local pollutants have already exceeded this level. Unless there are reductions, the food resources of riverine areas may never be of benefit to future generations. In nonindustrialized countries, the predominant use of pit latrines leads to microbial contamination of drinking water wells via underground water flow. It is vital that groundwater sources of drinking water be monitored, particularly where they are not treated or disinfected before drinking. In Nigeria, pipe-borne water is available to only 11% of rural households, and 40% of rural households obtain their water from streams (*21*). Application of fertilizer, which results in increased nitrates in groundwater, is another cause of concern in the nonindustrialized countries. Groundwater is also extensively polluted because of increased salinity following irrigation or saline intrusion on islands or in coastal areas. The improvement of water supplies increases productivity by saving fuel used to boil polluted water and, more importantly, by saving energy and time used to collect water from distant sources. Provision of boreholes in rural areas of Abakaliki, Enugu State, Nigeria, and public handpumps in Imo State, Nigeria, decreased the median time that an individual household spends on water collection during the dry season from 6 hr to 45 min daily (*30,31*).

Many of the causes of mortality and severe morbidity of Nigerians are easily preventable or can be simply remedied. There is a predominance of communicable diseases, particularly those related to inadequate environmental sanitation and poor hygiene complicated by malnutrition. Moreover, the absence of appropriate care frequently enhances the risk of complications during nonsubstantial disabilities. Global concerns for the health perturbations of women and children have resulted in the international adoption of community-based health programs (CBHP) as the key for accessibility, affordability, and social availability of health services (*32*). The two types of CBHP adopted in most nonindustrialized countries including Nigeria are: 1) the extension of preventive and curative health services to communities through the use of not highly trained PHC workers. PHC, which is meant to be an integral part and main function of the national health system, encompasses a protective, preventive, restorative, and rehabilitative role for every Nigerian. The PHC-based health services include the promotion of food supply and proper nutrition, immunization against principal infectious diseases, and maternal and child health care (*12–14,28*); 2) widely accessible, simple but effective technologies, such as growth monitoring, oral rehydration therapy for diarrhea, breastfeeding, immunization, food supplementation, and family planning (*32,33*). In Nigeria, political commitment for the promotion of health intervention exists at high governmental levels. Effective use of health intervention projects necessitates social mobilization, particularly at the community levels where the intervention projects are sited, not emphasis on the supply-side of health intervention, such as the provision of personnel, equipment, facilities, and drugs (*32,34*).

The prevailing concern in the long-term existence of externally aided health projects (*35*) is principally a result of the current global economic recession and the imposed structural adjustment policies on poor nations. It is, nevertheless, a fact that aid agencies are really concerned about enhancing the recipient nation's capacity to solve problems. By developing this capacity, realistic development can be pursued, and long-term reliance on external aid will be averted (*36*). The need to focus aid on undergirding a nation's capacity to formulate and execute coherent and comprehensive policies and well-developed plans for primary health care (*37*) has been emphasized. Both aid agencies and recipient governments have an obligation to find the best ways to sustain and strengthen donor-supported health projects. Sustainability goes beyond mere survival by providing for autonomous maintenance without prolonged dependence on external

assistance. Sustainability is not just a technicality, but encompasses social, cultural, and political questions that involve allocating the necessary resources to sustain services. This is achievable at every level by concentrating on strategic management and strengthening policy- and decision-making (*36*). Sustainability becomes evident in a donor-supported health project, for instance, if the desired goal prompts the recipient to make provision for the time, resources, and political support needed to achieve longer-term outcomes (*38*). Better health resource allocation may be abused, depending on one's perception, attitudes, and preferences.

Disillusionment with domestic development planning efforts (*16*) has increasingly affected all levels of our society with adverse consequences, particularly among the underprivileged, whose support is needed to undergird a better society and to attain our domestic development and social goals. We need policies that stimulate equitable sharing of benefits and growth, make adjustments even more essential than the reordering of budget priorities, and that encourage concerted global actions (*39*) and responses.

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